

JOURNAL
OF
SOUTH AFRICAN BOTANY
VOL. IV.

EIGHT NEW IRIDACEAE FROM THE CAPE
PROVINCE.

(With Plates 1—3.)

By G. J. LEWIS.

Babiana adpressa, Lewis. § Eu-Babiana.

B. Sprengelii, Baker, affinis sed foliis glabris vel subglabris, perianthii segmentis longioribus angustioribusque, differt.

Planta (corno incluso) 14·5 cm. alta, parte infra terram 7 cm. long., parte superiore ad terram adpressa. *Cormus* diam. 1·5 cm., tunicis e fibris tenuibus, superne per 4·7 cm. productis, compositis. *Folia* 7, plicata, obtusa, nervis minute ciliatis, ad terram adpressa, long. ad 5·5 cm., lat. ad. 1·8 cm. *Spica* c. 8-flora, secunda. *Bractea* obtusa, pilosa, long. 3 cm., lat. 1·2 cm. *Bracteolae* conduplicatae, acuminatae, long. 2·2 cm., basi per 5 mm. coalitae. *Perianthium* pallide lilacinum luteumque; tubo 2·1 cm. long., segmentis subaequalibus, obtusis vel subacutis, c. 3·5 cm. long., c. 7 mm. lat., 3 exterioribus minute apiculatis. *Stamina* ad tertiam vel ad dimidiam partem segmentum attingentia, filamentis 1·5 cm. long., antheris 6 mm. long. *Gynaecium* 4 cm. long., stylo fere ad apicem antherarum attingente, ovario glabro, 5 mm. long.

Hab. Cape Province, Clanwilliam Division, Nardouw Pass, July, 1933, T. M. Salter in National Botanic Gardens 1159/33 (in Bolus Herbarium).

The specific name *adpressa* has been given on account of the stem and leaves which are short and curved so that they lie flat upon the surface of the ground. It is closely allied to *B. Sprengelii*, Baker, but differs in its habit and also in having glabrous or subglabrous leaves and longer and comparatively narrower perianth-segments.

The drawings and description were made from plants which flowered in the National Botanic Gardens, Kirstenbosch, during July 1936, the

corms having been collected and presented by Paymaster-Captain T. M. Salter in 1933. (Plate 1.)

Description.—*Plant* (corm included) 14.5 cm. high; portion below ground 7 cm. long, upper portion curved and adpressed to ground. *Corm* 1.5 cm. diam., tunics very thin, extending upwards to form a "neck" 4.7 cm. long. *Leaves* 7, all curved towards ground, plicate, obtuse, minutely ciliate on veins, up to 5.5 cm. long, up to 1.8 cm. broad. *Spike* 8-flowered, secund. *Bract* obtuse, pilose, 3 cm. long, 1.2 cm. broad. *Bracteoles* conduplicate, acuminate, 2.2 cm. long, fused for 5 mm. at base. *Flowers* pale mauve and yellow; perianth-tube 2.1 cm. long; segments subequal, about 3.5 cm. long, about 7 mm. broad, 3 outer minutely apiculate. *Stamens* reaching about one-third or half-way up segments; filaments 1.5 cm. long, anthers 6 mm. long. *Gynaecium* 4 cm. long, style reaching to top of anthers; ovary glabrous, 5 mm. long.

***Babiana crispa*, Lewis. § Eu-Babiana.**

B. plicata, Ker, affinis sed laminis foliorum crispulatis undulatisque vix plicatis differt.

Planta (cormo incluso) 27 cm. alta. *Cormus* parvus, anguste ovoideus, 7 mm. diam., tunics e fibris tenuibus compositis. *Caulis* simplex, parte supra terram brevissimus. *Folia* 6 vel 8, diffusa vel suberecta; lamina plicata sed marginibus crispulatis undulatisque, spiraliter torta, acuminata, pilis mollis vestitis, 3.5 ad 13 cm. long. supra terram, lat. ad 6 mm. *Inflorescentia* 2—4-flora. *Bractea* herbacea, parce pilosa, apice brunnea, acuminata, 3 cm. long., lat. ad 9 mm. *Bracteolae* parum ultra dimidium coalitae, acuminatae, 2.5 cm. long. *Perianthium* pallide lilacinum 4.6—5.5 cm. long., tubo 1.4—2 cm. long.; segmenta marginibus leviter undulatis, exteriora obtusa, minute apiculata, interiora acuta; 3 superiora 2.5—3 cm. long, lat. ad 1 cm.; 3 inferiora parum breviora, 2 lateralibus pro parte majore pallide luteis, inferne linea purpurea 3-flexa notatis. *Stamina* arcuata, parum ultra dimidium segmenti attingentia. *Stylus* antheras leviter superans. *Ovarium* glabrum.

Hab. Cape Province, Clanwilliam Division, 2 miles north of Langekraal along the Clanwilliam to Doornbosch road, July 1933, P. Ross-Frames, Bolus Herbarium 20837, type!; Pakhuis Pass, Mrs. J. Bergh, B.H. 21399; road from Pakhuis to Wupperthal, Dr. C. L. Leipoldt, B.H. 20774; Langekraal, T. M. Salter in National Botanic Gardens 1158/33.

This attractive and very distinct *Babiana* was first discovered by Mr. P. Ross-Frames in 1933 and was grown in his garden at Kenilworth,



PLATE 2. *Babiana crispa*. 1. Bract. 2. Bracteoles. 3. Flower, front view. 4. Flower, longitudinal section; all natural size. (Del. G. J. Lewis.)

Eight New Iridaceae from the Cape Province.



PLATE 1. *Babiana ulpressa*. 1, Bract. 2, Bracteoles. 3, Flower, front view. 4, Flower, longitudinal section; all natural size. 5, Style branches, $\times 3$. (Del. G. J. Lewis.)

where it flowered in 1935 and again in July 1937, when the drawings and description were made from living plants kindly presented by him to the Bolus Herbarium. Three separate collectors have sent material of this species to the Bolus Herbarium since then, and the corms given to the National Botanic Gardens by Paymaster-Captain T. M. Salter flowered at Kirstenbosch during June and July 1937. The corms are small and very difficult to obtain, as they grow in rock crevices usually very tightly wedged and extending down to a considerable depth below the surface.

This species is allied to *B. plicata*, Ker, but differs from that and all other species in the genus in having undulate and crisped margins to the leaves. (Plate 2.)

Description.—*Plant* (including corm) 27 cm. high. *Corm* very small, elongated, 7 mm. diam.; tunics of very fine fibres. The flower-bearing corm is usually surrounded by 2 or 3 young corms forming a compact cluster. *Stem* simple, part above ground very short, overtopped by leaves. *Leaves* 6 or 8 to a plant, spreading or sub-erect, scarcely plicate but with margins crisped and undulate, twisting spirally, acuminate, bearing fine, silky hairs, 3.5–13 cm. long (above ground), up to 6 mm. broad. *Spike* 2–4-flowered. *Bract* slightly pubescent, acuminate, the apex brown, 3 cm. long, 8–9 mm. broad. *Bracteoles* fused except apex, which is free, acuminate, 2.5 cm. long. *Flowers* 4.6–5.5 cm. long; perianth-tube 1.4–2 cm. long; 3 upper segments pale mauve, 2.5–3 cm. long, up to 1 cm. broad; 3 lower segments slightly shorter, the 2 inner ones yellow in lower half with a deep mauve W-shaped mark at the base; 3 outer segments obtuse, minutely apiculate; 3 inner acute. *Stamens* arcuate reaching half-way up segments. *Style branches* overtopping stamens. *Ovary* glabrous.

***Babiana erectifolia*, Lewis. § Acaste.**

B. stricta, Ker var. *angustifolia*, Sweet affinis sed foliis erectis, firmis, minute ciliatis, acuminatioribus, bene plicatis, differt.

Planta (corno incluso) 22–25 cm. alta. *Cormus* parvus, 1.4 cm. diam.; tunics e fibris sat robustis, parallelis, superne per 7.5 cm. productis, compositis. *Caulis* gracilis, erectus, minute pubescens, vel folia leviter superans vel parum ultra dimidium foliorum attingens. *Folia* 6 vel 7, linearia, erecta, textura firma, acuminata, nervis minute ciliatis, 4–13 cm. long., 1.5–5 mm. lat. *Spica* sat densa, 3–9-flora. *Bractea* minute pilosa, obtusa, aliquando minute apiculata, 15–8 mm. long, 5–4 mm. lat. *Bracteolae* liberae, acuminatae, 14–6 mm. long. *Flores* aequilaterales; perianthii tubus 1.2 cm. long.; segmenta interiora oblonga, obtusa, pallide albo-lilacina, 2.1 cm. long., 9–12 mm. lat.;

exteriora lilacina, 2·1 cm. long., 8—10 mm. lat. *Stamina* aequilateralia, antheris 6 mm. long., 1—2 mm. lat. *Stylus* antheras aequans vel leviter superans. *Ovarium* pubescens.

Hab. Cape Province, Worcester Division, near Brand Vlei, in damp ground, September 1932, G. J. Lewis in National Botanic Gardens 2686/32, type ! (in Bolus Herbarium) ; near Worcester, Dr. C. L. Leipoldt, Bolus Herbarium 18559. Robertson Division, Boschjesmans Rivier, G. J. Lewis, Bolus Herbarium 22170.

The drawings and description are made from plants which flowered in the National Botanic Gardens, Kirstenbosch, during August, 1936. This species is closely allied to *B. stricta*, Ker var. *angustifolia*, Sweet, but differs in having more acuminate, erect and nearly glabrous leaves which are firm in texture. Like *B. stricta*, it is one of the more graceful species with a fairly long peduncle above the ground. (Plate 3.)

Description.—*Plant* (including corm) 22—25 cm. high. *Corm* small, 1·4 cm. diam. ; tunics composed of fairly strong, parallel fibres extending upwards to form a neck 7·5 cm. long. *Stem* slender, erect, seldom branched, equal to or overtopping leaves or sometimes reaching just over half-way up leaves. *Leaves* narrow, linear, acuminate, firmly plicate and firm in texture, erect, minutely ciliate on veins, 4—13 cm. long, 1·5—5 mm. broad. *Spike* 3—9-flowered, fairly dense. *Bract* minutely pubescent, obtuse, sometimes minutely apiculate, 15—8 mm. long, 5—4 mm. broad. *Bracteoles* free, acuminate, 14—6 mm. long. *Flowers* regular ; perianth-tube 1·2 cm. long ; 3 inner segments oblong, obtuse, pale creamy-mauve, the 2 lower segments having 2 small, dark mauve marks at their base, 2·1 cm. long, 9—12 mm. broad ; 3 outer segments mauve, as long as inner segments, 8—10 mm. broad. (In wild specimens the perianth-segments are slightly shorter and narrower than in the Kirstenbosch-grown plants described above.) *Stamens* equilateral ; anthers 6 mm. long, 1—2 mm. broad. *Style* as long as or just overtopping anthers, the branches flattened and slightly crenulate at the tips. *Ovary* pubescent.

Galaxia citrina, Lewis.

G. graminea, Thunb. affinis sed floribus majoribus perianthii segmentis longioribus angustioribusque differt.

Planta 8 cm. alta (cormo et flore inclusis). *Cormus* ovoideus, 1·3 cm. diam., tunicis rugosis, rigidis, ligneis. *Folia* omnino glabra, linearia, nitida, long. ad 7 em., lat. ad 4·5 mm. *Spatha* foliis similis, long. ad 4 cm., 3 mm. lat. *Bractea* superne herbacea sed infra membranacea sine pigmento, 2·1 cm. long., 8 mm. lat. *Flores* diam. ad 5 cm. ; perianthii tubus 2·8 cm. long. ; segmenta ex-

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PLATE 3. *Babiana erectifolia*. 1. Portion of leaf $\times 3$. 2—7 All natural size. 2. Bract. 3. Bracteoles. 4. Flower. 5. Flower, longitudinal section. 6. Outer perianth-segment. 7. Inner perianth-segment. (Del. G. J. Lewis.)

teriora 2.9 cm. long., 1.1 cm. lat., interiora 2.9 cm. long., 9 mm. lat., citrina, dorso atro-brunneo tincto. *Stamina* basi segmentis adnata; filamenta connata, 6 mm. long.

Hab. Cape Province, Clanwilliam Division, Cold Bokkeveld, between de Keur and top of Gydo Pass, B. Martin in National Botanic Gardens 2073/36 (in Bolus Herbarium).

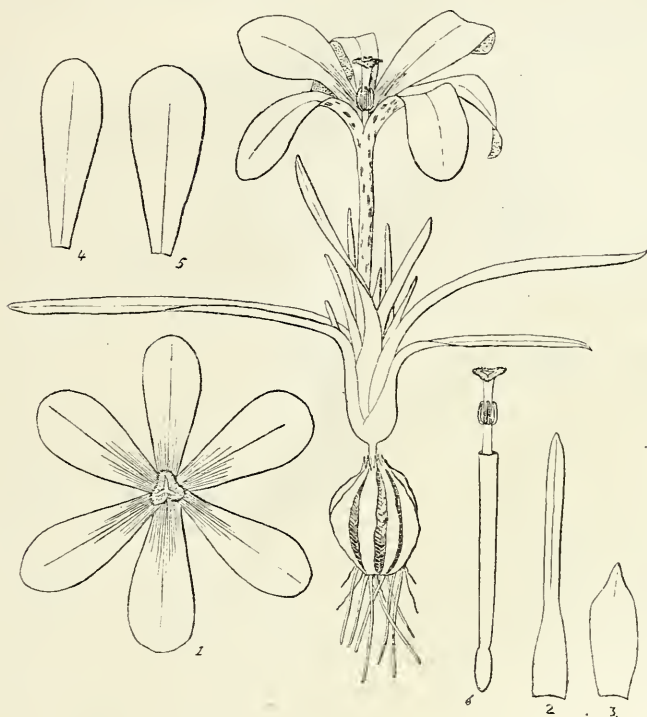


FIG. 1. *Galaxia citrina*. 1. Flower. 2. Spathe. 3. Bract. 4. Outer perianth-segment. 5. Inner perianth-segment. 6. Androecium, gynaecium and perianth-tube. All natural size.

The genus *Galaxia* is a very small one, consisting in the Flora Capensis of only two described species and four varieties. An interesting feature of the genus is the fact that although each plant gives rise usually to only one flower at a time, the flowers on all the plants open on the same day. The flowers are extremely fugitive and remain open for less than

a day, so that until the next buds open three or four days later, with the exception of one or two odd flowers, the plants remain inconspicuous until the massed brightness of the flowers attracts one's attention again.

The present species, with its bright lemon-coloured flowers, flowered freely in the National Botanic Gardens, Kirstenbosch, during July and August, 1937. It is closely related to *G. graminea*, Thunb., but differs in having very much larger flowers with comparatively longer and narrower perianth-segments. (Text-fig. 1.)

Description :—*Plant* 8 cm. high, including corm and flower. *Corm* ovoid, 1.3 cm. diam.; tunics woody, hard and ridged. *Leaves* smooth, shiny, entirely glabrous, up to 7 cm. long, 4.5 mm. broad. *Spathes* exactly resembling leaves, up to 4 cm. long, 3 mm. broad. *Bract* herbaceous above, membranous and colourless below, 2.1 cm. long, 8 mm. broad. *Flowers* up to 5 cm. diam. when expanded; perianth-tube 2.8 cm. long; outer segments 2.9 cm. long, 1.1 cm. broad; inner segments 2.9 cm. long, 9 mm. broad, all clear, bright lemon-yellow above, streaked with dark brown on the lower surface. *Stamens* attached to the base of the segments; filaments fused, 6 mm. long.

***Galaxia variabilis*, Lewis.**

G. graminea, Thunb. affinis sed foliis latioribus minus acuminatis marginibus minute pilosis differt.

Planta (cormo incluso) ad 7.5 cm. alta. *Cormus* globosus, 1.2 cm. diam.; tunicis infra paucis crassis rigidis, supra reticulatis mollioribus compositis. *Folia* linearia, obtusa vel subobtusa, leviter conduplicata, marginibus minute pilosis, 3—5.5 cm. long., lat. ad 6 mm. *Spatha* foliis similis, basi membranacea, 4.2 cm. long. *Bractea* dimidio inferiore membranacea, 2.3 cm. long., 8 mm. lat. *Perianthii tubus* 1.7—2 cm. long., 1.5 mm. diam. *Flores* roseo-lilacini, basi lutei, aliquando lutei vel albi; segmenta exteriora oblonga, superne rotunda, aliquando leviter emarginata, 2.4 cm. long., 1.2 cm. lat., interiora 2.4 cm. long., superne 1.1 cm. lat., infra unguiculata. *Stamina* filamentis connatis, 6 mm. long; antheris 3 mm. long. *Stylus* antheras leviter superans, 2.8 cm. long., stigmatis lobis late diffusis cristatis ciliatisque. *Ovarium* 1 cm. long.

Hab. Cape Province, Clanwilliam Division, Cold Bokkeveld, between de Keur and top of Gydo Pass, Prof. R. H. Compton and Party in National Botanic Gardens 2080/36 (in Bolus Herbarium.)

The specific name "*variabilis*" is given to this *Galaxia* because, at first sight, the flowers very closely resemble those of *Oxalis variabilis* and like those of *O. variabilis* they vary in colour. Usually the flowers are a soft mauve-pink above, yellow at the throat and with a band of magenta

where the two colours meet. Some flowers were found without this deeper band of colour, some salmon-pink and yellow and occasional pure white and pure yellow flowers as well.



FIG. 2. *Galaxia variabilis*. 1. Flower. 2. Bract. 3. Outer perianth-segment. 4. Inner perianth-segment. 5. Androecium and gynaecium; all natural size. 6. Androecium and stigma $\times 3$.

The plants made a beautiful show of colour on the Cold Bokkeveld in September, 1936, when corms were collected and all the corms planted in the National Botanic Gardens, Kirstenbosch, flowered during August and September, 1937.

After flowering the pedicel appears to elongate, the weight of the large capsules making it pendulous, so that the ripe fruits are frequently submerged in water as well.

Description :—*Plant* 28—43 cm. high. *Corm* oblong-ovoid, 1·5 cm. diam. ; tunics hard, dark brown. *Basal sheaths* 3, 1—2 cm., 3—5 cm. and 6—15 cm. long. *Leaf* 1, very slender, terete, erect, sheathing stem in lower third, much longer than peduncle, 33—42 cm. long, 1·5 mm. diam. *Peduncle* 15—27 cm. long. *Inflorescence* cymose, 1—5-flowered, subtended by 2 spathes 6 and 2·5 cm. long. *Pedicels* 1—2·5 cm. long. *Bract* green and herbaceous, acute, 8 mm.* long, 4 mm. broad. *Bracteoles* green and herbaceous in centre, the margins white and membranous, 8 mm. long, 4 mm. broad. *Flowers* white with a yellow throat. *Perianth-tube* 4 mm. long ; outer segments subacute or acute, 1·4 cm. long, 6—7 mm. broad ; inner segments orbicular, narrowing to a claw at the base, 1·3 cm. long, up to 9 mm. broad. *Stamens* very short ; filaments 2·5 mm. long ; anthers 3 mm. long. *Style* 3·5 mm. long ; style branches recurved, 1·5 mm. long. *Ovary* 2 mm. diam. *Fruit* a large, rounded capsule, 9 mm. diam.

***Ixia splendida*, Lewis. § Hyalis.**

I. paniculata, Delaroche affinis sed perianthii tubo brevioris dimidio superne dilatato, antheris tubo perianthii nullo modo exsertis, differt.

Planta gracillima, simplex, 33—71 cm. alta. *Cormus* c. 1·5 cm. diam. ; tunicis mollis, reticulatis. *Vaginae basales* 3, ad 9 cm. long. *Folia* basalia 3, anguste linearia, 18—39 cm. long., 2·5—5 mm. lat. ; caulina 1 vel 2. *Spica* sat densa, 5—9-flora. *Bractea* brunnea, membranacea, apice obtuso, tricuspidato, 7 mm. long. *Bracteolae* bracteas similes. *Flores* erecti vel suberecti, pallide rosei, concolores ; perianthii tubus 2 cm. long., basi 1 mm. diam., versus apicem gradatim ad 3 mm. diam. dilatatus ; segmenta apice orbiculata aliquando leviter bilobata, 1·7 cm. long., 6—7 mm. lat. *Stamina* in tubo perianthii inserta ; antherae segmentorum basi attingentes, luteae, 6 mm. long. *Stylus* dimidio antherarum attingens, ramis brevissimis.

Hab. Cape Province, Piquetberg Division, Zebra Kop, near stream on west slope of hill south of and next to Zebra Kop, Nov. 1934, N. S. Pillans 7183 (in Bolus Herbarium).

As the name implies, this is one of the most beautiful of the *Ixias*, having long-tubed, delicate rose-pink flowers. It is nearest *I. paniculata*, Delaroche but differs in having an unbranched stem and a shorter perianth-tube which dilates in the upper half. The anthers are not exserted at all from the throat of the perianth-tube.

Description :—*Plant* very slender, unbranched, 33—71 cm. high. *Corm* about 1.5 cm. diam. ; tunics soft, netted. *Basal sheaths* 3, up to 9 cm. long. *Leaves* 3 basal, narrow, linear, 18—39 cm. long, 2.5—5 mm. broad ; 1 or 2 cauline, varying in length. *Spike* fairly dense, 5—9-flowered. *Bract* brown and membranous, apex obtuse, tricuspidate, 7 mm. long. *Bracteoles* similar to bract. *Flowers* erect or suberect, pale rose-pink, concolorous ; perianth-tube 2.8 cm. long, dilating gradually from 1 mm. diam. at base to 3 mm. diam. at throat ; segments rounded or sometimes slightly bilobate at apex, 1.7 cm. long, 6—7 mm. broad. *Stamens* inserted in perianth-tube ; anthers just reaching to base of segments, yellow, 6 mm. long. *Style* reaching half-way up anthers ; style branches very short.

***Ixia Bolusii*, Lewis. § Hyalis.**

I. paniculata, Delaroche et *I. paucifolia*, Lewis affinis sed a priore cormo majore tunicis crassioribus, caule plerumque simplice, foliis 3 marginibus incrassatis, perianthii tubo brevioris, a posteriore planta altiore foliis erectis vel suberectis marginibus incrassatis, cormi tunicis minus crebris, basibus foliorum mortuum superne productis, differt.

Planta caule plerumque simplice, 38—55 cm. alta. *Cormus* 2.5 cm. diam., tunicis copiosis, e fibris crassis intertextis compositis, basibus foliorum mortuum superne 3—5 cm. productis. *Folia* 2 basalia producta, textura firma, nervis sat prominentibus marginibus incrassatis, erecta, 20—47 cm. long., lat. ad 1.1 cm. ; caulinum 1, parte libera brevissima. *Spica* sat laxa, 4—6-flora. *Bractea* membranacea sine pigmento, apice mucronulato, c. 7 mm. long. *Bracteolae* bracteas similes, 8 mm. long. *Perianthii tubus* 3—3.5 cm. long., basi .5 mm. diam., sursum versus apice gradatim ad 1.5 mm. diam. dilatatus ; *segmenta* 1—1.3 cm. long., 4—5 mm. lat., alba, concolora. *Stamina* filamentis apice tubo perianthii attingentis, antheris exsertis. *Stylus* apice antheris attingens, ramis brevissimis.

Hab. Cape Province, Worcester Division, Hex River Valley, near De Doorns, Oct. 1907, Dr. H. Bolus, Bolus Herbarium No. 13197.

This is an interesting species forming a link between *I. paniculata* and *I. paucifolia*. It is really more closely allied to the latter species but differs in being much taller, the leaves erect or suberect with thickened margins, and in the corm which has strong, wiry fibres, not as thick as in *I. paucifolia*, and the dead remains of leaves extending upwards to form a neck. From *I. paniculata* it differs in the larger corm with thicker tunics ; the stem is usually simple ; there are only 3 leaves which are broader, more strongly ribbed and with thickened margins ; the bracteoles are slightly longer than the bracts and the perianth-segments are

shorter and comparatively broader. The flowers are cream or white, concolorous.

Description :—*Plant* 38—55 cm. high ; stem usually simple, occasionally branched. *Corm* 2·5 cm. diam. ; tunics numerous, of thick, interwoven fibres ; neck of dead leaf remains 3—5 cm. long. *Leaves* 2 basal, firm, the margins thickened, veins fairly prominent, erect, 20—47 cm. long, up to 1·1 cm. broad : 1 cauline, sheathing most of stem. *Spike* fairly lax, 4—6-flowered. *Bract* colourless, membranous, minutely cuspidate at apex, about 7 mm. long. *Bracteoles* similar to bract, 8 mm. long. *Perianth-tube* 3—3·5 cm. long, ·5 mm. diam. at base, widening very gradually up to 1·5 mm. diam. at throat. *Perianth-segments* 1—1·3 cm. long, 4—5 mm. broad. *Stamens* with filaments reaching to top of perianth-tube, anthers exserted. *Style* reaching to top of anthers, branches very short.
